

Data Structure MCQ Question Answer

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Question: 1. Which if the following is/are the levels of implementation of data structure

- Option A. Application level
- Option B. Abstract level
- Option C. Implementation level
- Option D. All of the above

Question: 2. Which one of the following permutations can be obtained the output using stack assuming that the input is the sequence 1,2,3,4,5 in that order ?

- Option A. 3,4,5,2,1
- Option B. 3,4,5,1,2
- Option C. 5,4,3,1,2
- Option D. 1,5,2,3,4

Question: 3. A binary search tree whose left subtree and right subtree differ in hight by at most 1 unit is called

- Option A. AVL tree
- Option B. Red-black tree
- Option C. Lemma tree
- Option D. None of the above

Question: 4. The initial configuration of the queue is a,b,c,d (a is the front end). To get the configuration d,c,b,a one needs a minimum of ?

- Option A. 3 additions and 2 deletions
- Option B. 2 deletions and 3 additions
- Option C. 3 deletions and 4 additions
- Option D. 3 deletions and 3 additions

Question: 5. _____ level is where the model becomes compatible executable code

- Option A. Abstract level
- Option B. Implementation level
- Option C. Application level
- Option D. All of the above

Question: 6. Linked list are not suitable data structure of which one of the following problems ?

- Option A. Binary search
- Option B. Insertion sort
- Option C. Radix sort
- Option D. Polynomial manipulation

Question: 7. Stack is also called as

Option A. Last in first out

Option B. First in last out

Option C. Last in last out

Option D. First in first out

Question: 8. The number of possible ordered trees with three nodes A,B,C is?

Option A. 16

Option B. 12

Option C. 6

Option D. 10

Question: 9. Which of the following is true about the characteristics of abstract data types?

i) It exports a type.

ii) It exports a set of operations

Option A. True, False

Option B. False, True

Option C. True, True

Option D. False, False

Question: 10. Which of the following algorithm design technique is used in the quick sort algorithm?

Option A. Dynamic programming

Option B. Greedy method

Option C. Divide and conquer

Option D. Backtracking

Question: 11. _____ is not the component of data structure.

Option A. Operations

Option B. Algorithms

Option C. Storage Structures

Option D. None of above

Question: 12. The number of swapping needed to sort numbers 8,22,7,9,31,19,5,13 in ascending order using bubble sort is ?

Option A. 11

Option B. 12

Option C. 13

Option D. 14

Question: 13. Which of the following is not the part of ADT description?

Option A. Data

- Option B. Operations
- Option C. Both of the above
- Option D. None of the above

Question: 14. Which of the following statement is true ?

- Option A. Breath first search cannot be used to find converted components of a graph.
- Option B. Optimal binary search tree construction can be performed efficiently using dynamic programming.
- Option C. Given the prefix and post fix walks over a binary tree.The binary tree cannot be uniquely constructe
- Option D. Depth first search can be used to find connected components of a graph.

Question: 15. Inserting an item into the stack when stack is not full is called _____ Operation and deletion of item form the stack, when stack is not empty is called _____operation.

- Option A. push, pop
- Option B. insert, delete
- Option C. pop, push
- Option D. delete, insert

Question: 16. _____ is very useful in situation when data have to stored and then retrieved in reverse order.

- Option A. Stack
- Option B. Queue
- Option C. List
- Option D. Link list

Question: 17. Is a pile in which items are added at one end and removed from the other.

- Option A. Queue
- Option B. Stack
- Option C. List
- Option D. None of the above

Question: 18. Which data structure allows deleting data elements from and inserting at rear?

- Option A. Stacks
- Option B. Dequeues
- Option C. Queues
- Option D. Binary search tree

Question: 19. Given two sorted lists of size m and n respectively.The number of comparisons needed in the worst case by the merge sort algorithm will be?

- Option A. mn
- Option B. max(m,n)
- Option C. min(m,n)

Option D. $m+n-1$

Question: 20. Which of the following data structure can't store the non-homogeneous data elements?

Option A. Arrays

Option B. Records

Option C. Pointers

Option D. Stacks

Question: 21. A _____ is a data structure that organizes data similar to a line in the supermarket, where the first one in line is the first one out.

Option A. Stacks linked list

Option B. Queue linked list

Option C. Both of them

Option D. Neither of them

Question: 22. Which of the following is non-linear data structure?

Option A. List

Option B. Stacks

Option C. Trees

Option D. Strings

Question: 23. Merge sort uses ?

Option A. Divide and conquer strategy

Option B. Backtracking approach

Option C. Heuristic search

Option D. Greedy approach

Question: 24. Header node is used as sentinel in ____

Option A. Graphs

Option B. Binary tree

Option C. Stacks

Option D. Queues

Question: 25. To represent hierarchical relationship between elements, Which data structure is suitable?

Option A. Tree

Option B. Graph

Option C. Priority

Option D. Dequeue

Question: 26. Which of the following data structure is non linear type?

Option A. Lists

- Option B. Strings
- Option C. Graph
- Option D. Stacks

Question: 27. Which data structure is used in breadth first search of a graph to hold nodes?

- Option A. Array
- Option B. Stack
- Option C. Tree
- Option D. queue

Question: 28. Which of the following data structure is linear type?

- Option A. Graph
- Option B. Binary tree
- Option C. Trees
- Option D. Stack

Question: 29. Identify the data structure which allows deletions at both ends of the list but insertion at only one end.

- Option A. Stack
- Option B. Input restricted dequeue
- Option C. Priority queues
- Option D. Output restricted queue

Question: 30. The complexity of Binary search algorithm is

- Option A. $O(n)$
- Option B. $O(\log n)$
- Option C. $O(n^2)$
- Option D. $O(n \log n)$

Answer Sheet

1	D	
2	A	
3	A	
4	D	
5	B	
6	A	
7	A	
8	B	
9	C	
10	C	
11	D	
12	D	
13	D	
14	B	
15	A	
16	A	
17	A	
18	C	
19	D	
20	A	
21	B	
22	C	
23	A	
24	B	
25	A	
26	C	
27	D	
28	D	
29	B	
30	B	